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Ckeirs@counselip.com**FAX TRANSMISSION COVER SHEET****Date:** 10/26/2005 11:06 AM**To:** USPTO**Fax:** 571-273-8300**From:** Chris Keirs**Client/Matter #:** 221-0074US**Re:** pat. appln. s/n 10/689,392**Pages (including cover page):** 14**COMMENTS:**

13-page Appeal Brief for patent application serial no. 10/689,392 filed 10/20/2003  
by Robert E. Smith III

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
Robert E. Smith III	§	Confirmation No. 2874
Serial Number: 10/689,392	§	
Filed: 10/20/2003	§	Examiner: Alison K. Pickard
For: SEAL RETAINER WITH PRESSURE ENERGIZED METAL SEAL MEMBERS FOR UNDERSEA HYDRAULIC COUPLING	§	Group art unit: 3673
	§	Atty Docket No. 221-0074US

Commissioner for Patents  
P. O. Box 1450  
Alexandria, Virginia 22313-1450

**APPEAL BRIEF****I. Real Party in Interest**

The real party in interest is the assignee of the entire interest, National Coupling Company, Inc.

**II. Related Appeals and Interferences**

None

**CERTIFICATE OF TRANSMISSION**

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By: Christopher Keirs  
Christopher D. Keirs

Date: 26 Oct 2005

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### III. Status of Claims

Claims 1 – 8 and 11 – 16 are pending. Claims 1 – 4, 6 – 8 and 11 – 16 are rejected. Claim 5 is objected to as having allowable subject matter but depending from a rejected claim. The appealed claims are 1 – 4, 6 – 8 and 11 – 16.

### IV. Status of Amendments

No amendment has been filed subsequent to the final rejection.

### V. Summary of Claimed Subject Matter

In one embodiment (claims 1 - 8), Applicant's invention takes the form of a seal retainer (10) for an undersea female hydraulic coupling member (72). The basic configuration and use of a seal retainer in an hydraulic coupling is described in Applicant's U.S. Patent No. 6,663,144 entitled: "Seal Retainer for Undersea Hydraulic Coupling."

The seal retainer (10) claimed in the subjct casc has at least two metal seals 64,68). The first metal seal (64) is integral with the seal retainer (10) and is capable of effecting a pressure-energized seal between the seal retainer and the probe of a male coupling member inserted into a female hydraulic coupling member (72) containing the seal retainer. The claimed seal retainer (10) additionally has a second metal seal (68) also integral with the seal retainer (10) for creating a pressure-energized seal between the seal retainer and the female hydraulic coupling member (72) containing the seal retainer.

The first integral metal seal (64) may be a metal lip seal. This metal lip seal may be dimensioned such that it is slightly displaced when the probe of a male coupling member is inserted.

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The second integral metal seal (68) may be a metal concave seal. This metal concave seal may be adapted to be pressure-energized by fluid on either the interior (80) or exterior (82) of the seal retainer (10).

In another embodiment (claims 10 – 16), Applicant's invention takes the form of an undersea female hydraulic coupling member (72) comprising a seal retainer (10) as described above. The female coupling member (72) has a shoulder in its internal bore and the second integral pressure-energized metal seal (68) on the seal retainer (10) forms a seal between the seal retainer and the shoulder of the female coupling member (72) containing the seal retainer.

#### VI. *Grounds of Rejection to be Reviewed on Appeal*

The Examiner rejected claims 1 – 8 and 11 – 16 under §103(a) as being unpatentable over Applicant's U.S. Patent No. 5,015,016 (Smith016) in view of U.S. Patent No. 3,142,498 (Press). The Examiner contends that Smith016 discloses a seal retainer 22 that comprises a first metal seal 15 and a second metal seal 55. The Examiner further contends that element 29 of Smith016 is an inner seal carrier.

The Examiner contends that Press teaches a lip seal and a retainer with the lip seal integral with the body of the retainer.

The Examiner additionally cites Cunningham (USP 5,893,389) for the proposition "that it is known to make a seal integral with a body."

#### VII. *Argument*

The Examiner attempts to combine the teachings of two references in order to make an obviousness rejection of the claimed invention. However, the combination of the cited references does not lead to the claimed invention; there is no motivation for one skilled in the

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art to combine the teachings of these references; and, the Examiner cites no teaching or suggestion to combine the references.

Claim 1 is to a seal retainer having integral metal seals. Sleeve member 22 of Smith016 (which holds annular soft seals 26 and 27) has no integral seals of any type. This may be clearly seen in the exploded view of Figure 3. All the sealing elements of Smith016 (V-shaped seal 15, annular soft seals 26 & 27 and metal C-seal 55) are separate pieces – not integral with sleeve 22.

Smith016 discloses an internal pressure loaded V-seal connector. It is not obvious how V-seal 15 and/or C-seal 55 of the Smith016 coupling could be fabricated such that they would be integral with sleeve 22. The teachings of Press provide no resolution to this problem.

Element 29 of Smith016 is not an “inner seal carrier” – it carries no seals. “The V-seal 15 is retained on the seal seat 65 with a nut 29 or retaining clip. The nut may be threaded onto mating threads 30 in the internal bore 61 of sleeve member 22. Alternatively, the clip may be secured with a clip groove in the internal bore (not shown).” [col. 6; lines 52-57]

The swivel joint assembly described in Press has no seal retainer.

Press describes a non-separable pipe joint wherein the ends of the pipes themselves are formed into male and female members which are held together by flanged nut 17. As may be clearly seen in Figure 1, there is no seal retainer in the swivel joint of Press. Those skilled in the art will appreciate that a seal retainer requires both sealing engagement with the male member and with the body of the female member. But Press has only a single lip seal. The joint assembly of Press requires only a single seal because there is no separate retainer (which would require sealing to the opposing member). Accordingly, there is no motivation for one skilled in the art to combine the teachings of Smith016 and Press to reach the claimed invention.

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221-0074USControlling Law

Section 103(a) of the Patent Statute precludes the granting of a patent if “the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art ....” The “as a whole” instruction in §103 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment could consist of breaking an invention into its component parts (A + B + C), then finding a prior art reference containing element A, another containing element B, and another containing element C, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result – often the very definition of invention. Section 103 precludes this hindsight discounting of the value of new combination by requiring assessment of the invention as a whole. The Federal Circuit has provided further assurance of a showing that one of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would select the various elements from the prior art and combine them in the claimed manner. In other words, the examiner must show some suggestion or motivation, before the invention itself, to make the new combination.

*Ruiz v. A. B. Chance Co.*, 69 USPQ2d 1686, 1690 (Fed. Cir. 2004).

When a patent describes a new mechanical device that can be viewed as a new combination or arrangement of mechanical components, the legal conclusion of obviousness requires that there be some suggestion, motivation, or teaching in the prior art whereby the person of ordinary skill would have selected the components that the inventor selected and used them to make the new device. *C. R. Bard Inc. v. M3 Sys. Inc.*, 48 USPQ2d 1225 (Fed. Cir. 1998) There must be something in the prior art as a whole to suggest the desirability, and thus the

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obviousness, of making the combination. *Heidelberger Druckmaschinen AG v. Hantscho Comm. Prods., Inc.*, 30 USPQ2d 1377 (Fed. Cir. 1994); *In re Geiger*, 2 USPQ2d 1276 (Fed. Cir. 1987); *Alco Standard Corp. v. Tennessee Valley Auth.*, 1 USPQ2d 1337 (Fed. Cir. 1986); *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 1 USPQ2d 1196 (Fed. Cir. 1986); *Carella v. Starlight Archery & Pro Line Co.*, 231 USPQ 644 (Fed. Cir. 1986); *Lindemann Maschinensfabrik v. American Hoist & Derrick Co.*, 221 USPQ 481 (Fed. Cir. 1984).

In the present case, the Examiner has attempted to derive Applicant's invention by combining elements from unrelated references. This combining of references is made without any motivation, teaching or suggestion to combine in the prior art of record. Most if not all inventions arise from a combination of old elements. It is not uncommon to find every element of a new invention in the prior art. *In re Kotzab*, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *Id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. 55 USPQ2d at 1316 (citations omitted)

### VIII. Conclusion

Applicant's claimed invention comprises a seal retainer having at least two, integral metal seals. In rejecting the claims, the Examiner has attempted to combine a reference that discloses a seal retainer having no integral seals (Smith016) with a reference that has no seal retainer (Press).

Combining the teachings of the Smith016 and Press references does not lead to the claimed invention because Smith016 is directed to a pressure-loaded V-seal that seals between the

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face of the male member and a shoulder on sleeve member 22. The Examiner provides no explanation of how the disclosure of Press would enable a person skilled in the art to make such a pressure-loaded V-seal integral with sleeve member 22 of Smith016 (the element that holds axial soft seals 26 and 27). Sleeve member 22 of the Smith016 coupling has no integral seals and the swivel joint of Press has no separate seal retainer which would require or accommodate two metal seals. As appreciated by those skilled in the art, when a female hydraulic coupling includes a seal retainer, at least two seals are required – one between the male member and the seal retainer and another between the seal retainer and the body of the female member. Unlike a female hydraulic coupling, nothing is inserted into the swivel joint of Press. The only seal required is that between the two sections of pipe being joined.

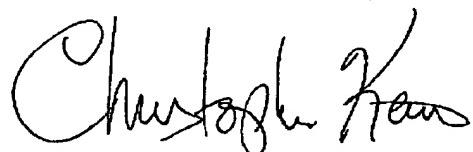
The coupling of Smith016 utilizes a pressure loaded V-seal that is designed to expand upon pressurization. Claim 2 requires the first integral metal seal to be a lip seal. Claim 7 requires the second integral metal seal to be a concave seal. These seals are designed to contract upon pressurization.

Cunningham (USP 5,893,389) describes metal seals for check valves, but none of the check valves disclosed therein has a seal retainer. Rather, the lip seals described in Cunningham (42D and 43D in Fig. 7) are an integral part of check valve body 30D. [col. 5; lines 1-6]

The combination of cited references would not enable one skilled in the art to make and use the claimed invention. Moreover, in rejecting the claims, the Examiner has combined references without a teaching, suggestion or motivation to combine. Such combination is improper under the case law concerning §103 of the statute. As a result, Applicant submits that claims 1 – 8 and 11 – 16 and are allowable over the cited references.

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### VIII. Claims Appendix

1. A seal retainer for an undersea female hydraulic coupling member, comprising:
  - a. a first metal seal integral with the seal retainer for creating a pressure-energized seal between the seal retainer and a probe of a male coupling member inserted in a female hydraulic coupling member containing the seal retainer; and,
  - b. a second metal seal integral with the seal retainer for creating a pressure-energized seal between the seal retainer and a female hydraulic coupling member containing the seal retainer.
2. The seal retainer of claim 1 wherein the first integral metal seal is a metal lip seal.
3. The seal retainer of claim 2 wherein the first integral metal lip seal is dimensioned such that it is slightly displaced when the probe of a male coupling member is inserted.
4. The seal retainer of claim 3 wherein the displacement of the first integral metal lip seal is about 0.001 inches.
5. A seal retainer as recited in claim 2 wherein the seal retainer comprises a substantially outer shell and a substantially inner seal carrier comprising a metal body and the first integral metal lip seal and the second integral metal seal are machined into the body of the seal carrier.

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6. The seal retainer of claim 2 wherein the first integral metal lip seal is configured to be pressure energized by fluid surrounding the probe of the male member.

7. The seal retainer of claim 1 wherein the second integral metal seal is a metal concave seal.

8. The seal retainer of claim 7 wherein the metal concave seal is adapted to be pressure energized by fluid on either the interior or exterior of the seal retainer.

9. (canceled)

10. (canceled)

11. An undersea female hydraulic coupling member comprising a seal retainer comprising a first integral metal pressure energized seal for forming a seal between the seal retainer and a probe of a male coupling member inserted in the female coupling member, and a second integral pressure energized metal seal for forming a seal between the seal retainer and a shoulder of the female coupling member containing the seal retainer.

12. The undersea hydraulic coupling member of claim 11 wherein the first integral metal pressure energized seal is a metal lip seal.

13. The undersea hydraulic coupling member of claim 12 wherein the second integral pressure energized metal seal is a metal concave seal.

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14. The undersea hydraulic coupling member of claim 12 wherein the integral metal lip seal is slightly displaced when the probe of the male coupling member is inserted into the female coupling member.
15. The undersea hydraulic coupling member of claim 13 wherein the integral metal concave seal is slightly displaced when the seal retainer is installed in the female coupling member.
16. The undersea hydraulic coupling member of claim 14 wherein the displacement of the integral metal lip seal is about 0.001 inches.

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**IX. Evidence Appendix**

None

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**X. Related Proceedings Appendix**

None